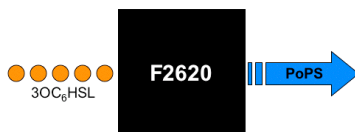


BBa_F2620

3OC₆HSL → PoPS Receiver

http://parts.mit.edu/registry/index.php/Part:BBa_F2620



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Description

A transcription factor (LuxR, BBa_C0062) that is active in the presence of cell-cell signaling molecule 3OC₆HSL is controlled by a TetR-regulated operator (BBa_R0040). Device input is 3OC₆HSL. Device output is PoPS from a LuxR-regulated operator. If used in a cell containing TetR then a second input signal such as aTc can be used to produce a Boolean AND function.

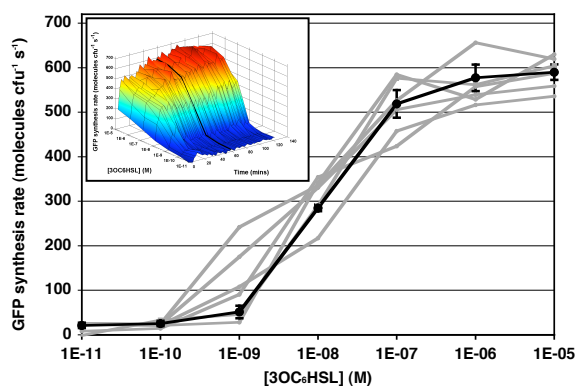
Characteristics

Input Swing: 0.1 to 1000 nM 3OC₆HSL, exogenous
Output Swing: 21±3 to 590±9 GFP molecules cfu⁻¹ s⁻¹
Switch Point: 10 nM 3OC₆HSL, exogenous
LH Response: 9.7 min (t_{50%}), 17 min (t_{90%})

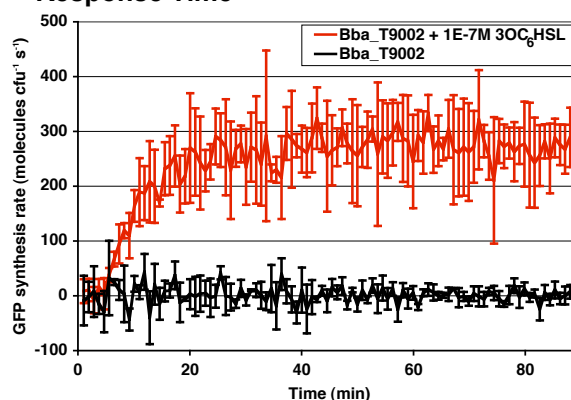
Key Components

BBa_R0040: TetR-regulated operator
BBa_C0062: luxR ORF
BBa_R0062: LuxR-regulated operator

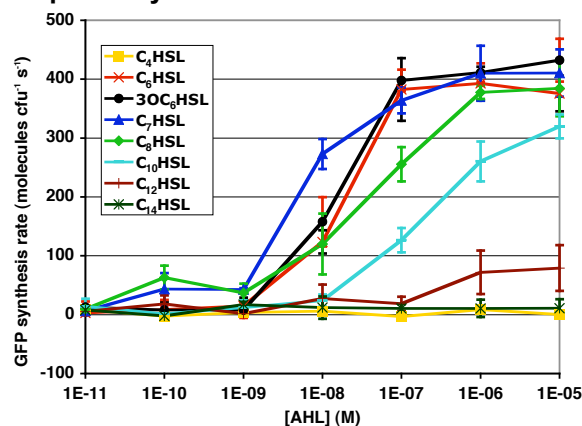
Transfer Function*



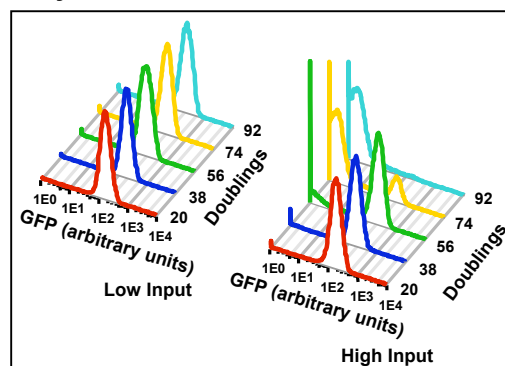
Response Time*



Specificity*



Stability**



Demand (low/high input)

Translational: 336/9449 ribosomes cfu⁻¹
5040/141600 charged tRNA cfu⁻¹ s⁻¹

Stability (low/high input)

Genetic: >92/74 replication events*
Performance: >92/74 replication events*

Compatibility

Chassis: Compatible with MC4100, MG1655, and DH5α
Plasmids: Compatible with pSB3K3 and pSB1A2
Devices: Compatible with E0240, E0430 and E0434
Crosstalk with systems containing TetR (C0040)
Signaling: Crosstalk with input molecules similar to 3OC₆HSL

Conditions (abridged)

Output: Indirect via BBa_E0240
Vector: pSB3K3
Chassis: MG1655
Culture: Supplemented M9, 37°C
***Equipment:** PE Victor3 plate reader
****Equipment:** BD FACScan cytometer

Signaling Devices

Registry of Standard Biological Parts

making life better, one part at a time

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